AMENDMENTS

In the claims:

1. (Currently Amended) A detection device used in an image forming apparatus, comprising:

a light-emitting element which emits light towards a toner pattern formed on an image carrier;

a first light-receiving element which detects the light reflected from the toner pattern;

a second light-receiving element which detects the light reflected from the toner pattern in a fashion different from the first light-receiving element; and

a control unit which calculates the amount of toner of the toner pattern based on the output values from the first and second light-receiving elements, ~~as well as~~ and also calculates the position of the toner pattern based on the output value from the first light-receiving element.

2. (Original) A detection device as claimed in claim 1, wherein said light-emitting element includes a polarizing plate, and said first light-receiving element includes a polarizing plate having a direction of polarization parallel to the polarizing plate of the light-emitting element, while the second light-receiving element includes a polarizing plate having a direction of polarization different from the polarizing plate of the light-emitting element.

3. (Original) A detection device as claimed in claim 2, wherein said control unit calculates the position of the toner pattern based on the detection value output by said first light-receiving element.

4. (Original) A detection device as claimed in claim 3, wherein said detection value output by the first light-receiving element is a wave form voltage represented by a wave having a width

and height, the center of gravity position of the wave represents the position of the toner pattern.

5. (Original) A detection device as claimed in claim 1, wherein said control unit calculates the amount of toner of the toner pattern based on the difference between the detection value output by the first light-receiving element and the detection value output by the second light-receiving element.

6. (Original) A detection device as claimed in claim 1, wherein the amount of light emission from said light-emitting element is adjusted based on the toner amounts calculated based on the amount of reflected lights detected by the first and second light-receiving elements.

7. (Original) A detection device as claimed in claim 1, wherein said calculation of said control unit is carried out using halftone patterns, dot patterns, screen patterns or solid patterns as the toner patterns when the toner amount of the toner pattern is calculated, and the calculation is performed using line patterns when the position of the toner pattern is calculated.

8. (Currently Amended) An image forming apparatus comprising:

an intermediate transfer unit;

a plurality of image forming units disposed to the intermediate transfer unit;

a plurality of transfer elements which sequentially transfer toner patterns

formed by each of said image forming units onto the intermediate transfer unit;

a light-emitting element which emits light towards the toner patterns formed on the intermediate transfer unit;

a plurality of light-receiving elements each of which detects the reflected light from the

toner patterns; and

a control unit which calculates the toner amount of each toner pattern based on the output values from said plurality of light-receiving elements, ~~as well as~~ and also calculates the position of each toner pattern based on the output value from one of the light-receiving elements.

9. (Original) An image forming apparatus as claimed in claim 8, wherein said light-emitting element includes a polarizing plate, and one of light-receiving elements includes a polarizing plate having a direction of polarization parallel to the polarizing plate of the light-emitting element, while another of said light-receiving elements includes a polarizing plate having a direction of polarization different from the polarizing plate of the light-emitting element.

10. (Original) An image forming apparatus as claimed in claim 9, wherein said control unit calculates the position of the toner pattern based on the detection value output by said one of the light-receiving elements.

11. (Original) An image forming apparatus as claimed in claim 10, wherein said detection value is a wave form voltage represented by a wave having a certain width and height, the center of gravity position of the wave represents the position of the toner pattern.

12. (Original) An image forming apparatus as claimed in claim 8, wherein said control unit calculates the amount of toner of the toner pattern based on the difference between the detection values.

13. (Original) An image forming apparatus as claimed in claim 8, wherein the amount of light emission from said light-emitting element is adjusted based on the toner amounts calculated based on the amount of reflected lights detected by said plurality of light- receiving elements.

14. (Original) An image forming apparatus as claimed in claim 8, wherein said calculation of said control unit is carried out using halftone patterns, dot patterns, screen patterns or solid patterns as the toner patterns when the toner amount of the toner pattern is calculated, and the calculation is performed using line patterns when the position of the toner pattern is calculated.

15. (Original) A toner amount and color shift amount calculation method employed in a color image forming apparatus, said method comprising steps of:

irradiating a toner pattern formed on an image carrier with light from an irradiation element via a polarizing plate;

detecting the amount of light reflected form said toner pattern using a plurality of light-receiving elements; and

calculating the toner amount of the toner pattern on the image carrier and the position of the toner pattern based on the amount of reflected light detected by the light-receiving elements, wherein when the toner amount on the image carrier is calculated, calculation is carried out based on the amount of reflected light detected by two or more light-receiving elements, and when the color shift amount is calculated, calculation is carried out based on the amount of reflected light detected by one light-receiving element.